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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,709	02/21/2002	Kenji Nishinakagawa	1248-0577P-SP	6234
2292	7590	06/03/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			TRAN, TUAN A	
			ART UNIT	PAPER NUMBER
			2682	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/078,709	<b>Applicant(s)</b> NISHINAKAGAWA, KENJI	
	<b>Examiner</b> Tuan A. Tran	<b>Art Unit</b> 2682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 May 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futamara et al. (6,535,499) in view of Gardenfors et al. (6,633,550).

Regarding claim 1, Futamara discloses a transmitter-receiver circuit (See fig. 8) comprising: a band pass filter 75b which extracts a desired frequency component from a receiving signal; a controllable filter 79 which removes an unnecessary frequency component from a transmitting signal; a digital circuit 83b, provided in association with the band pass filter 75b, for generating a frequency adjustment signal so as to adjust band pass characteristics of the band pass filter 75b; first adjustment means, provided in the band pass filter 75b for adjusting the band pass characteristics of the band pass filter 75b; a demodulation 76 for analog-demodulating a signal fed from the band pass filter 75b; and second adjustment means for adjusting frequency of the controllable filter 79, wherein the first adjustment means adjusts the band pass characteristics in response to the frequency adjustment signal and the frequency adjustment signal fed from the digital circuit 83b is shared for adjustment of the band pass characteristics and adjustment of a signal in the demodulation circuit by the first adjustment means, and

Art Unit: 2682

adjustment of frequency by the second adjustment means (See figs. 1, 8 and col.1 line 61 to col. 3 line 50, col. 12 lines 44-64). However, Futamara does not mention that the controllable filter 79 is a low pass filter wherein its cut-off frequency is adjusted by the second adjustment means and the low pass filter is provided in a chip in which the band pass filter is provided. Gardenfors teaches a transceiver circuit (See fig. 4) comprising: a band pass filter 120 which extracts a desired frequency component from a receiving signal; and a low pass filter 124 which removes an unnecessary frequency component from a transmitting signal, wherein the low pass filter is provided in a chip in which the band pass filter is provided (See fig. 4 and col. 1 lines 43-55, col. 6 lines 17-47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Gardenfors in reconfiguring the transceiver as disclosed by Futamara with a controllable low pass filter wherein its cut-off frequency is adjusted by the second adjustment means and the low pass filter is provided in a chip in which the band pass filter is provided for the advantage of enhancing the signal quality as well as reducing the overall size of the transmitter-receiver circuit.

Regarding claim 2, Futamara & Gardenfors disclose as cited in claim 1.

Gardenfors further discloses a radio frequency signal transmitted and received is in a 2.4 GHz and is a signal, which uses a spread spectrum technology by frequency spreading (See col. 2 lines 17-65).

2. Claims 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futamara et al. (6,535,499) in view of Gardenfors et al. (6,633,550) as applied to claims 1 above, and further in view of Saito (6,490,441) and Ichihara (6,466,270).

Regarding claims 3-9, Futamara & Gardenfors discloses as cited in claim 1.

Gardenfors further discloses a radio frequency signal transmitted and received is in a 2.4 GHz and is a signal, which uses a spread spectrum technology by frequency spreading (See col. 2 lines 17-65). However, they do not disclose the first adjustment means of the band pass filter (variable filter) and the second adjustment means of the low pass filter (variable low pass filter) comprises: a plurality of impedance elements having equivalent functions, wherein the impedance elements are resistances connected in series between an input and an output terminals or capacitors connected in parallel between an input and output terminals; and switching elements which are switched under control of the frequency adjustment signal (filter controller's signal) so as to selectively operate the impedance elements, wherein the switching elements short or open terminals of the respective resistors or connected in series with the respective capacitors so as to connect or disconnect the respective capacitors between the input and output terminals. Saito teaches a structure of a variable band pass filter used in a transceiver circuit (See fig. 6) wherein the variable band pass filter comprises: a plurality of impedance elements having equivalent functions, wherein the impedance elements, are variable capacitors connected in parallel between an input and output terminals, inherently includes a switching elements, which are switched under control of the frequency adjustment signal (filter controller's signal) so as to selectively operate the

Art Unit: 2682

impedance elements, are connected in series with the respective capacitors so as to connect or disconnect the respective capacitors between the input and output terminals (See fig. 6 and col. 5 lines 1-53). Ichihara teaches a structure of a variable low pass filter 23 (See fig. 2) comprising: a plurality of impedance elements having equivalent functions, wherein the impedance elements are resistances R1, R2, R3 connected in series between an input and an output terminals; and switching elements S1 which are switched under control of the frequency adjustment signal (filter controller's signal) so as to selectively operate the impedance elements, wherein the switching elements short or open terminals of the respective resistors (See fig. 2 and col. 5 lines 18-42).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teachings of Saito & Ichihara in constructing variable band pass and low pass filters of the transceiver circuit as disclosed by Futamara & Gardenfors for the advantage of controlling the characteristics of the variable filters such as bandwidths, Q points or cut-off frequencies in order to enhance signal reception/transmission.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Cahill (5,287,556); Urs et al. (6,529,488).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan Tran** whose telephone number is **(571) 272-7858**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Vivian Chin**, can be reached at **(571) 272-7848**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

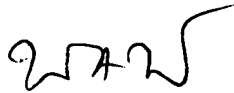
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Application/Control Number: 10/078,709


Page 7

Art Unit: 2682

A handwritten signature in black ink, appearing to be 'Tuan Tran'.

Tuan Tran

AU 2682

A handwritten signature in black ink, appearing to be 'Lee Nguyen'.

LEE NGUYEN  
PRIMARY EXAMINER